DRAWING AMENDMENTS

In FIG. 2, please amend as indicated:

"Some of Twisted Pair(s) <u>Connection(s)</u> ~~Conection(s)~~ To Device 210 May Employ Auto MDIX"

A FIG. 2 annotated mark-up drawing depicting the correction and a FIG. 2 replacement drawing sheet are enclosed.

REMARKS/ARGUMENTS

Brief Summary of Status

Claims 1-44 are pending in the application.

Claims 20-24 and 36-44 are allowed.

Claims 1, 2, 6-11, 14-17, 25-28, and 31-35 are rejected.

Claims 3-5, 12, 13, 18, 19, 29, and 30 objected to.

2.   In the above-referenced office action, the Examiner rejected claims 1, 2, 6-11, 14-17, 25-28, and 31-35 under 35 U.S.C. §102(e) as being anticipated by Bar-Niv (U.S. Patent No. 6,442,142 B1) (hereinafter referred to as "Bar-Niv").

11.   The Examiner has indicated that claims 3-5, 12, 13, 18, 19, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12.   Claims 20-24 and 36-44 are allowed.

35 U.S.C. §102(e)

In the above-referenced office action, the Examiner rejected claims 1, 2, 6-11, 14-17, 25-28, and 31-35 under 35 U.S.C. §102(e) as being anticipated by Bar-Niv.

The Applicant respectfully traverses.

In the above-referenced office action, the Examiner asserts:

"3. Claims 1, 11, 14, 25, Bar-Niv teaches an energy detect with auto pair select system [title, abstract, Fig. 1], comprising:

a device that is operable to perform energy detection with auto pair selection [system 10 of Fig. 1];

a plurality of wire pairs that is communicatively coupled to the device [line 14 of Fig, 1]; and

wherein the device generates a qualified energy by considering an energy associated with at least two wire pairs within the plurality of wire pairs [abstract, col. 1, line 57 thru col. 2, line 8];

the device uses the qualified energy to determine whether at least one additional device is communicatively coupled to the device via at least one wire pair within the plurality of wire pairs [abstract, col. 2, lines 13-16, 24-28]; and

the device performs auto power down when no device is communicatively coupled to the device via the wire pair [col. 2, lines 45-48]." (see office action, Part of Paper No./Mail Date 20050310, pp. 2-3).

The Applicant respectfully points out that the subject matter as claimed by the Applicant within claim 1 includes at least:

"a device that is operable to perform energy detection with auto pair selection;

a plurality of wire pairs that is communicatively coupled to the device; and

wherein the device generates a qualified energy by considering an energy associated with at least two wire pairs within the plurality of wire pairs;

the device uses the qualified energy to determine whether at least one additional device is communicatively coupled to the device via at least one wire pair within the plurality of wire pairs; and

the device performs auto power down when no device is communicatively coupled to the device via the wire pair".

The Applicant respectfully points out that the subject matter as claimed by the Applicant within claim 25 includes at least:

"performing energy detection of a plurality of wire pairs, at least one wire pair within the plurality of wire pairs is communicatively coupled to a device;

generating a qualified energy by considering an energy associated with at least two wire pairs within the plurality of wire pairs;

determining whether at least one additional device is communicatively coupled to the device via at least one wire pair within the plurality of wire pairs; and

performing auto power down when no device is communicatively coupled to the device via the wire pair".

"Energy detection system 10 comprises a squelch circuit 16, which is connected directly to a communication line 14 external to transceiver 12, and which monitors the voltage on line 14. The operation of circuit 16 is described in detail hereinbelow." (Bar-Niv, col. 4, lines 6-9).

Everywhere that the Bar-Niv refers to reference numeral 14 (of FIG. 1), it is as referred to as "a communication line" or "a line" (i.e., a singular line, not a plurality of line). Moreover, the FIG. 1 explicitly depicts a singular wire pair "communication line 14" coupled to "transceiver 12" (i.e., not "a plurality of wire pairs" as claimed by the Applicant). This singular wire pair "communication line 14" is sometimes referred to as including a "differential voltage" in the Bar-Niv reference.

Some examples of this only singular communication line terminology and limitation employed in the Bar-Niv reference are provided:

"a communication line 14" (Bar-Niv, col. 4, line 7).

"line 14" (Bar-Niv, col. 4, line 9).

"line 14" (Bar-Niv, col. 4, line 9).

"communication line 14" (Bar-Niv, col. 4, lines 21-22).

"the *differential* voltage on communication line 14" (Bar-Niv, col. 4, lines 30-31, *emphasis added*).

"the *differential* voltage on communication line 14" (Bar-Niv, col. 4, lines 32-33, *emphasis added*).

"communication line 14" (Bar-Niv, col. 4, lines 41-42).

"communication line 14 of a *single link pulse*" (Bar-Niv, col. 5, lines 22-23, *emphasis added*).

Clearly, given the use of the terminology of "differential" signal (e.g., "differential voltage") and the singular (not plural) usage through the Bar-Niv reference of the "communication line 14", as well as the explicit depiction in FIG. 1 of Bar-Niv of a singular wire pair "communication line 12" connected to "transceiver 12", the Bar-Niv reference does not intend to indicate that there is more than one differential "communication line 14" or wire pair connected to the "transceiver 12" in FIG. 1 of Bar-Niv.

The Bar-Niv reference also includes description of "communication line 14 of a *single link pulse*" further indicating that this is only a singular communication line that carries only 1 signal at a time.

The Bar-Niv reference described only monitoring and detection with respect to a singular receive signal line, and the Bar-Niv reference does not perform monitoring and detection with respect to both a receive signal line and transmit signal line.

This is further evident by the fact that the Bar-Niv reference only monitoring and detection with respect to a singular "communication line 14".

In contradistinction, in one embodiment described within the Applicant's specification, "the present invention considers energy detection information from both the transmit and receive wire pairs." (Applicant's specification, p. 9, lines 11-12).

"When a transceiver is trying to determine if there is a link partner attached, then the present invention is operable to perform monitoring of all of the wire pairs that are connected to the transceiver. This is particularly helpful when auto MDIX is employed, and there is no knowledge of the connectivity of the pairs. Here, with no knowledge of which is the transmit pair and which is the receive pair, then the present invention is operable to monitor both pairs." (Applicant's specification, p. 9, lines 16-21).

Clearly, the Applicant claims subject matter that includes generating a qualified energy by considering "at least two wire pairs within the plurality of wire pairs" within claims 1 and 25.

Therefore, the Bar-Niv reference fails to teach each and every limitation of the subject matter as claimed by the Applicant within at least claims 1 and 25.

The Applicant respectfully points out that the subject matter as claimed by the Applicant within claim 11 includes at least:

"a device that is operable to perform energy detection with auto pair selection;

a wire pair that is communicatively coupled to the device; and

wherein the device determines whether the wire pair comprises an energy;

the device subtracts a link pulse energy from the energy when the device transmits a link pulse to generate a qualified energy, the link pulse energy is associated with a link pulse that is transmitted from the device;

the device uses the energy as the qualified energy when the device does not transmit a link pulse; and

the device uses the qualified energy to determine whether at least one additional device is communicatively coupled to the device via the wire pair".

The Applicant respectfully points out that the Bar-Niv reference does not perform any subtraction at all in its description. In fact, the words "subtract", "subtraction", "minus", "difference", or similarly operable terminology does not even appear in the Bar-Niv reference.

The Applicant also respectfully believes that the Examiner apparently fails to treat or deal with the limitation "the device subtracts a link pulse energy from the energy when the device transmits a link pulse to generate a qualified energy, the link pulse energy is associated with a link pulse that is transmitted from the device" of the Applicant's claimed subject matter within claim 11.

When dealing with at least the Applicant's limitation of "qualified energy" when rejecting claims 1, 11, 14, and 25, the Examiner asserts the following:

"wherein the device generates a qualified energy by considering an energy associated with at least two wire pairs within the plurality of wire pairs [abstract, col. 1, line 57 thru col. 2, line 8]" (see office action, Part of Paper No./Mail Date 20050310, pp. 2).

As described above, the Applicant has pointed out that the Bar-Niv reference does not perform any "considering an energy associated with at least two wire pairs" at all.

This Examiner-cited portion of the Bar-Niv reference is as follows:

"A method for determining whether signal data exists on a communication line, including: receiving a signal from the line; measuring a level of the received signal at a plurality of predetermined times; comparing the measured levels with predetermined reference levels so as to identify a plurality of valid data pulses; measuring a time interval between two or more of the valid data pulses; and determining that the valid pulses represent signal data responsive to the measured time interval" (Bar-Niv, abstract).

"In some preferred embodiments of the present invention, a signal energy detection system for use in a communications device comprises a *digital filter, which analyzes incoming pulses at a plurality of times to make an initial determination of signal energy on a communications line,* typically a communication line wherein an Ethernet standard transmission is present. The initial determination is further analyzed in a *signal validation machine,* which *checks a time interval between consecutive signals* found in the initial determination, in order to make a more accurate final determination of the

presence of valid signal energy on the communications line. The *final determination* is preferably used to control automatic power switching of the device. The use of the digital filter to make an initial analysis of the incoming pulses, together with the use of the signal validation machine to make a more accurate analysis, enables valid signal pulses to be detected and reduces the chance of a non-valid pulse being assumed to be valid, in a significantly simpler system than is at present known in the art." (Bar-Niv, col. 1, line 57 thru col. 2, line 8, *emphasis added*).

These Examiner-cited portions of the Bar-Niv reference fail at least to teach and disclose at least the "qualified energy" associated limitation within the Applicant's claimed subject matter of claim 11 that includes at least:

"the device subtracts a link pulse energy from the energy when the device transmits a link pulse to generate a qualified energy, the link pulse energy is associated with a link pulse that is transmitted from the device;

the device uses the energy as the qualified energy when the device does not transmit a link pulse; and

the device uses the qualified energy to determine whether at least one additional device is communicatively coupled to the device via the wire pair".

The Bar-Niv reference operates, in contradistinction to the subject matter as claimed by the Applicant, by monitoring a singular communication line and sampling it a first time and then a second time after a certain time interval has elapsed. There is no description of any subtraction of signal therein.

Specifically, the Bar-Niv reference disclose that *"digital filter, which analyzes incoming pulses at a plurality of times to make an initial determination of signal energy on a communications line"* and the "initial determination is further analyzed in a *signal validation machine*, which *checks a time interval between consecutive signals* found in the initial determination, in order to make a more accurate final determination of the presence of valid signal energy on the communications line".

According to the Bar-Niv reference, the "digital filter" performs an "initial determination", and the "signal validation machine" makes a "more accurate final determination" as cited below.

"The *digital filter* receives incoming digital pulses, preferably generated by a squelch circuit responsive to the line energy, and *checks if respective levels of the pulses at a plurality of preset times*, most preferably two times, are above respective predetermined values. If both the levels are above the predetermined values, the filter makes an initial assumption that signal energy is present in the communication line, and sets an output level high

Preferably, the high output level from the digital filter is transferred to the *signal validation machine*, which preferably comprises a finite state machine, wherein further analysis of the signal characteristics is made in order to determine if the line energy comprises a valid signal. *The signal validation state machine checks the time between consecutive transitions to a high level*. If the time between consecutive transitions is within a preset interval, wherein the preset interval is most preferably a function of the clock rate and the temporal separation of sequential idle pulses of the incoming signals, the state machine sets a signal-valid level high indicating that signal energy is present in the communication line. Because a signal-valid level is set high only on receipt of two consecutive transitions within the preset time interval, the output of spurious signal-valid levels is significantly reduced." (Bar-Niv, col. 2, lines 9-31, *emphasis added*)

The Applicant again respectfully points out that this description within the Bar-Niv reference is only performed with respect to "incoming digital pulses" on one communication line. There is no monitoring of more than one communication line or pair.

Moreover, the Applicant respectfully points out that the levels of each of the "incoming digital pulses" is only compared to "respective predetermined values". The "incoming digital pulses" are not compared to one another, and there is no subtraction at all of energy corresponding to one digital pulse from energy corresponding to another digital pulse within the description of the Bar-Niv reference.

To support a proper 35 U.S.C. §102(e) rejection, the cited reference must teach and disclose each and every element of the subject matter as claimed by the Applicant.

The Applicant respectfully asserts that the Bar-Niv fails to teach and disclose each and every element of the subject matter as claimed by the Applicant within claims 1, 2, 6-11, 14-17, 25-28, and 31-35.

The Applicant respectfully believes that claims 1, 2, 6-11, 14-17, 25-28, and 31-35 are allowable over Bar-Niv.

As such, the Applicant respectfully requests that the Examiner withdraw the rejections of claims 1, 2, 6-11, 14-17, 25-28, and 31-35 under 35 U.S.C. §102(e) as being anticipated by Bar-Niv.

Allowable Subject Matter

11.   The Examiner has indicated that claims 3-5, 12, 13, 18, 19, 29, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 20-24 and 36-44 are allowed.

The Applicant respectfully believes that claims 1, 11, and 25 are allowable in light of the comments made above.

Moreover, the Applicant respectfully believes that claims 3-5, being further limitations on the subject matter of claim 1, are also allowable.

The Applicant respectfully believes that claims 12, 13, 18, 19, being further limitations on the subject matter of claim 11, are also allowable.

The Applicant respectfully believes that claims 29, 30, being further limitations on the subject matter of claim 25, are also allowable.

Drawings

The Applicant has amended FIG. 2 to correct a spelling error.

A FIG. 2 annotated marked-up drawing depicting the correction and a FIG. 2 replacement sheet are enclosed.

The Applicant respectfully believes that claims 1-44 are in condition for allowance and respectfully requests that they be passed to allowance.

The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication would advance the prosecution of the present patent application.

RESPECTFULLY SUBMITTED,

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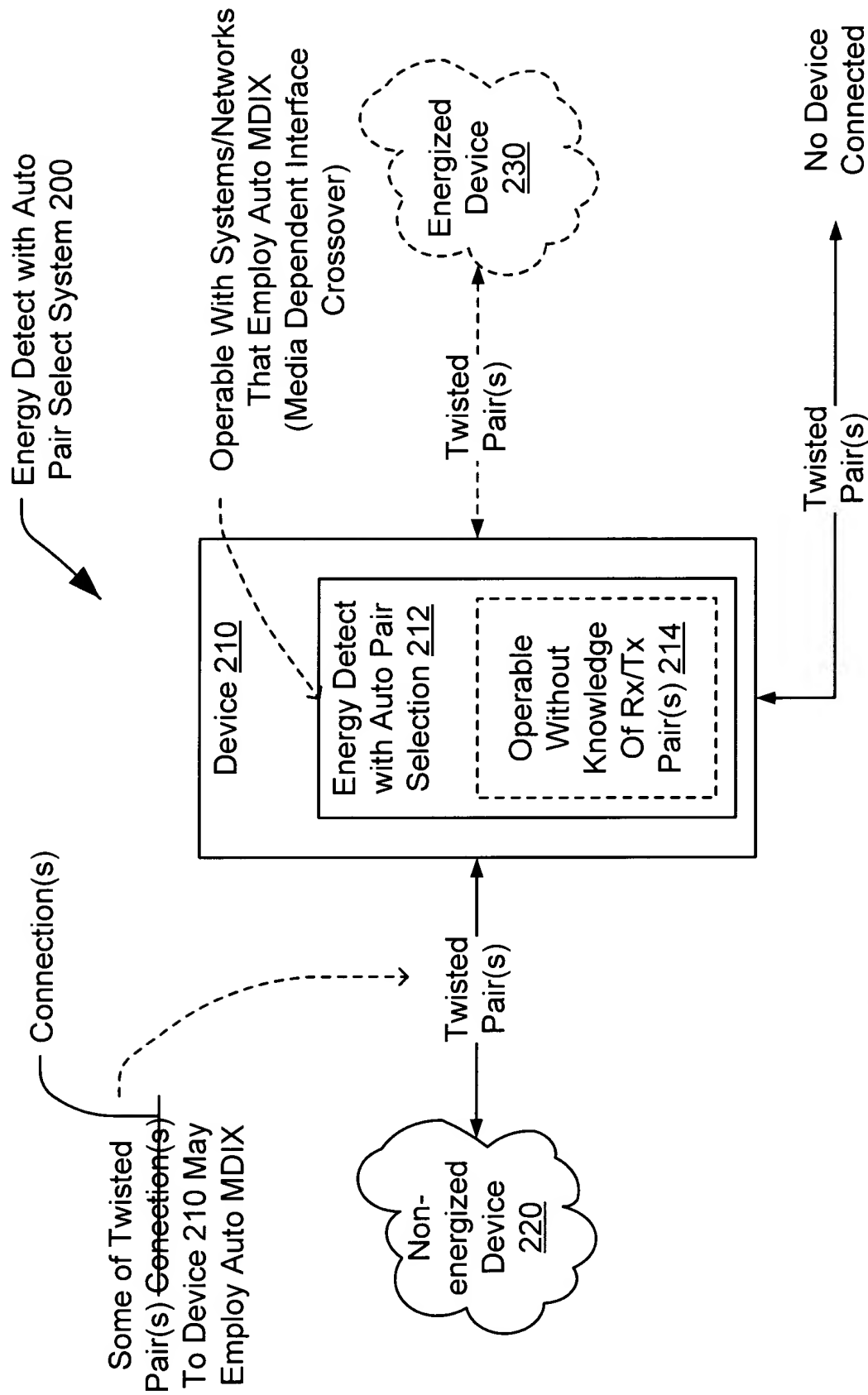
BP1520: Annotated Marked-up Drawing

Energy Detect with Auto
Pair Select System 200

Operable With Systems/Networks
That Employ Auto MDIX
(Media Dependent Interface
Crossover)

Energized
Device
230

No Device
Connected

Twisted
Pair(s)

Twisted
Pair(s)

Device 210

Energy Detect
with Auto Pair
Selection 212

Operable
Without
Knowledge
Of Rx/Tx
Pair(s) 214

Connection(s)

Some of Twisted
Pair(s) Conection(s)
To Device 210 May
Employ Auto MDIX

Twisted
Pair(s)

Non-
energized
Device
220

Fig. 2